Montana Department of Natural Resources and Conservation
Water Resources Division
Water Rights Bureau

ENVIRONMENTAL ASSESSMENT
For Routine Actions with Limited Environmental Impact

Part I. Proposed Action Description

1. Applicant/Contact name: **Trent Wallis**
PO Box 185
Lavina, MT 59046

2. Type of action: **Application to Change a Water Right No. 40A 30106497.**

3. Water source name: **Musselshell River**

4. Location affected by project: **Sections 10, 11 & 14, T6N, R23E, Golden Valley County.**

5. Narrative summary of the proposed project, purpose, action to be taken, and benefits:

The applicant proposes to change the point of diversion (POD) and place of use (POU) on Statement of Claim 40A 204377 and convert from historic flood irrigation to center pivot irrigation. The means of diversion will change from a headgate to a new pump located in the NESWSW of section 10, T6N, R23E, Golden Valley County.

The DNRC shall issue a water use permit if an applicant proves the criteria in 85-2-311 MCA are met.

6. Agencies consulted during preparation of the Environmental Assessment:
(include agencies with overlapping jurisdiction)

Dept. of Environmental Quality Website - TMDL 303d listing
MT. National Heritage Program Website - Species of Concern
USDI Fish & Wildlife Service Website - Endangered and Threatened Species
MT State Historic Preservation Office - Archeological/Historical Sites
USDA Natural Resources Conservation Service – Web Soil Survey
USDI Fish & Wildlife Service – Wetlands Online Mapper

Part II. Environmental Review

1. Environmental Impact Checklist:

PHYSICAL ENVIRONMENT

WATER QUANTITY, QUALITY AND DISTRIBUTION

Water quantity *- Assess whether the source of supply is identified as a chronically or periodically dewatered stream by DFWP. Assess whether the proposed use will worsen the already dewatered condition.*

Determination: **No Significant Impact.**

The source is the Musselshell River, which has been declared chronically dewatered under MCA 85-2-150. It is closed to new appropriations from July through September. The Musselshell River Water Management Study shows that most years no water is reasonably available for appropriation during these months. It also shows that in some years no water is available for appropriation at any time and that many existing water rights are not satisfied. Because of this situation, any added burden on the source represents an adverse effect to other water users. The Department's assessment of the proposed change is that the flow rate will be reduced from 15 CFS to 2.2 CFS, the diverted volume will be reduced from 268.4 AF to 161.8 AF, and the estimated consumptive use will remain the same. If Applicant adheres to all Department conditions of appropriation (measurement), this project will not have a significant impact on surface water quantity in the Musselshell River.

Water quality *- Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.*

Determination: **No Significant impact.**

The reach of the Musselshell River near this project has been designated as needing a TMDL plan. The 2014 303d listing identifies impairments to aquatic life support probably caused by low flow alterations, streamside vegetation alteration, Nitrogen & Phosphorous levels and other habitat alterations. No significant impacts to water quality are anticipated because of this project. Water quality may, in fact, improve, due to the conversion from flood to sprinkler irrigation, as return flows will be reduced, thereby reducing the nutrient load. The stipulations/conditions noted under the water quantity section above and detailed later in this document could limit further impact to the impaired conditions to aquatic life by ensuring minimum stream flows are left in the source. In addition, the place of use for irrigation has been previously disturbed by past agriculture practices, and the area disturbed will be slightly decreased under the proposed project.

Ground water *- Assess if the proposed project impacts ground water quality or supply. If this is a ground water appropriation, assess if it could impact adjacent surface water flows.*

Determination: **No Significant Impact.**

The proposed change should not have a significant impact on groundwater quality or supply. The proposed place of use for the new pivot may realize a minor increase in seasonal water table elevations; in turn, the potentiometric water surface under acres being retired from flood irrigation should see a decrease in seasonal elevations.

DIVERSION WORKS - *Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.*

Determination: **No Significant Impact.**

The proposed means of diversion is a Cornell RB-30 pump. Water conveyance will occur through a 10" mainline pipe to the center pivot sprinkler irrigation system. The system is in place, therefore no further impacts due to diversion works are expected because of this project. The old system's point of diversion previously required a high diverted volume to operate the flood irrigation system, and diverted a large flow of water from the source. The appropriator will now be diverting a lower amount of water to operate the pivots.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species - *Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."*

Determination: **No Significant Impact.**

The Montana National Heritage Program currently lists the Black-tailed Prairie Dog, Hoary Bat, Great Blue Heron, Greater Sage-Grouse, Spiny Softshell, Plains Spadefoot and one fish (Northern Redbelly Dace) as Species of Concern within Township 6 North Range 23 East. There are no known Plant Species of Concern listed in the area of interest. The USDI Fish & Wildlife Service Report (Sept. 2009) indicates that Golden Valley County has one species listed as endangered, the Black-footed Ferret. Since this project is associated with ground that has been previously farmed and grazed; there is a low likelihood of impact to endangered or threatened species because of this appropriation.

Wetlands - *Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.*

Determination: **No Significant Impact.**

The acreage involved in this application has been previously farmed and therefore, no wetlands should not be impacted within the irrigated field. The USDI Fish & Wildlife Service – Wetlands Online Mapper shows Freshwater Emergent and Freshwater Forested/Shrub Wetland types in the area; they should not be affected by the proposed irrigation. The project proposes to retire irrigated acres adjacent to wetlands and move the acres away from any wetlands in the area.

Ponds - *For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.*

Determination: **No Significant Impact.**

This project does not involve a pond. No impact to wildlife, waterfowl, or fisheries is anticipated.

GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE - *Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.*

Determination: **No Significant Impact.**

No significant impacts to the soil profile are anticipated. The predominant soil type is Delpoint, calcareous-Cabbart-Yamacall, calcareous, loams, with 4 to 15 percent slopes. The Sodium Adsorption Ratio is very low for all the soil components in the area of interest and the acreage involved in this permit application has been previously developed for irrigation and therefore, should not be impacted by this project. The crop under the pivot will increase the ground coverage, therefore reducing soil erosion and potentially allow for an increase in soil moisture due to less soil exposure. Degradation of soil quality, alteration of soil stability, or moisture content is not expected with this project.

VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS - *Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.*

Determination: **No Significant Impact.**

Typical construction activities associated to pump & pipeline installation can cause short-term disturbances to vegetative cover; however, there is a low likelihood of any long term or significant impact because of this project. The crop under the pivot will increase the ground coverage, therefore reducing soil erosion. It is the responsibility of the property owner to control noxious weeds on their property.

AIR QUALITY - *Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.*

Determination: **No Significant Impact.**

It is unlikely air quality will be deteriorated. No impacts to air quality have been identified.

HISTORICAL AND ARCHEOLOGICAL SITES - *Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project if it is on State or Federal Lands. If it is not on State or Federal Lands simply state NA-project not located on State or Federal Lands.*

Determination: **No Significant Impact.**

Not Applicable – Project not located on State or Federal Lands

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY - *Assess any other impacts on environmental resources of land, water and energy not already addressed.*

Determination: **No Significant Impact.**

No additional impacts are anticipated.

HUMAN ENVIRONMENT

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS - *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

Determination: **No Significant Impact.**

No locally adopted environmental plans or goals have been identified.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES - *Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.*

Determination: **No Significant Impact.**

This proposal should not impact recreational activities in the area.

HUMAN HEALTH - *Assess whether the proposed project impacts on human health.*

Determination: **No Significant Impact.**

No impacts to human health have been identified.

PRIVATE PROPERTY - *Assess whether there are any government regulatory impacts on private property rights.*
*Yes___ No_**X**__ If yes, analyze any alternatives considered that could reduce, minimize, or eliminate the regulation of private property rights.*

Determination: **No Significant Impact.**

OTHER HUMAN ENVIRONMENTAL ISSUES - *For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.*

Impacts on:

(a) *Cultural uniqueness and diversity?* **None**

(b) *Local and state tax base and tax revenues?* **None**

(c) *Existing land uses?* **Flood irrigation to sprinkler irrigation.**

(d) *Quantity and distribution of employment?* **None**

(e) *Distribution and density of population and housing?* **None**

(f) *Demands for government services?* **None**

(g) *Industrial and commercial activity?* **None**

(h) *Utilities?* **Electrical consumption by pivot.**

(i) *Transportation?* **None**

(j) *Safety?* **None**

(k) *Other appropriate social and economic circumstances?* **None**

2. ***Secondary and cumulative impacts on the physical environment and human population:***

Secondary Impacts - **Department analysis finds less return flows are expected in the riparian zone along the Musselshell River due to the conversion from wheel-line to pivot- sprinkler irrigation. The Applicant proposes to divert less volume with the pivot system and as such, the timing of the flow regime will be modified. Secondary impacts are expected to be minor, more water will be available in the stream during periods of pivot diversion and consumptive use for the new center pivot system as it relates to historic wheel-line irrigation will not change.**

Cumulative Impacts - **More and more historic acres are being converted to center pivot sprinkler irrigation to facilitate better water management, increased production and reduced labor. Water is more easily managed with a pivot and application rates can be matched to the landowners' specific soil characteristics. Generally, acres under a center pivot system will experience increased production compared to flood acres, which in turn increases crop water consumption. In this instance, the Applicant will be limited to using the same consumptive use after conversion from flood to pivot irrigation, and a water measuring device will aid in controlling the amount of water used.**

3. *Describe any mitigation/stipulation measures:*

No mitigation or stipulation measures have been identified by the Applicant. The Department may impose a measurement condition to ensure required criteria are met.

4. *Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider:*

No action alternative: Deny the application. This alternative would result in none of the benefits being realized by the Applicant.

PART III. Conclusion

1. *Preferred Alternative*

The preferred alternative is the proposed alternative.

2 *Comments and Responses*

None Received.

3. ***Finding:***
*Yes___ No_**X**__ Based on the significance criteria evaluated in this EA, is an EIS required?*

If an EIS is not required, explain <u>why</u> the EA is the appropriate level of analysis for this proposed action:

None of the identified impacts for any of the alternatives are significant as defined in ARM 36.2.524.

Name of person(s) responsible for preparation of EA:

Name: Michael Everett
Title: Water Resources Specialist – LRO *Date*: 05/12/2017